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Disclosures

• None
Introduction
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Drowning in Applications for Residency Training
A Program’s Perspective and Simple Solutions

Robert M. Naclerio, MD; Jayant M. Pinto, MD; Fuad M. Baroody, MD

Author Affiliations


Application Overload in the Residency Match Process

Jeffrey S. Berger, MD, MBA
Anne Cioletti, MD

Relationship Between the Number of Residency Applications and the Yearly Match Rate: Time to Start Thinking About an Application Limit?

Steven J. Weissbart, MD, Soo Jeong Kim, BA, Richard S. Feinn, PhD, Jeffrey A. Stock, MD
Purpose

• To examine trends for application submission for Vascular Surgery Integrated Residencies
Methods

- Electronic Residency Application Service (ERAS)
- The National Residency Match Program (NRMP)
- NRMP Results and Data 2008-2017 for North American Seniors was used to create a database of applicant and application information
  - applications sent per applicant
  - average number of applications received per residency program
  - the number of applicants a program needs to rank to fill all positions in a program
- Applicant pool depth and applicant behavior regarding percentage of programs applied to was calculated
- Cost
- Charting Outcome data 2014 and 2016
  - application board scores
  - experiences
Process

Pre Interview -> Interview -> Post Interview
Process

Pre Interview

- Applicants
  - Submit ERAS
- Programs
  - Review applications
  - Offer interviews
- Applicants
  - Accept/reject interviews

Interview

Post Interview
Process

Pre Interview
- Applicants
  - Submit ERAS
- Programs
  - Review applications
  - Offer interviews
- Applicants
  - Accept/reject interviews

Interview
- Applicants
  - Attend interviews
  - Cancel unnecessary interviews
- Programs
  - Host interviews

Post Interview
Pre Interview
- Applicants
  - Submit ERAS
- Programs
  - Review applications
  - Offer interviews
- Applicants
  - Accept/reject interviews

Interview
- Applicants
  - Attend interviews
  - Cancel unnecessary interviews
- Programs
  - Host interviews

Post Interview
- Applicants
  - Submit rank lists
- Programs
  - Submit rank lists
Applicant Pool

NUMBER OF APPLICANTS

US Seniors

YEAR

Reference 11
**Applicant**
- **ERAS Submissions**

**AVERAGE NUMBER OF PROGRAMS APPLIED TO BY AN APPLICANT**

Year | Average Number
--- | ---
2008 | 3.1
2009 | 8.1
2010 | 13.2
2011 | 14.4
2012 | 19.8
2013 | 22.5
2014 | 21.3
2015 | 27.3
2016 | 33.5
2017 | 35.1

Reference 11
Pre Interview
- ERAS Submissions

Percentage of Programs Applied To

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>34.44</td>
</tr>
<tr>
<td>2009</td>
<td>42.63</td>
</tr>
<tr>
<td>2010</td>
<td>60.00</td>
</tr>
<tr>
<td>2011</td>
<td>48.00</td>
</tr>
<tr>
<td>2012</td>
<td>48.29</td>
</tr>
<tr>
<td>2013</td>
<td>48.91</td>
</tr>
<tr>
<td>2014</td>
<td>41.76</td>
</tr>
<tr>
<td>2015</td>
<td>47.89</td>
</tr>
<tr>
<td>2016</td>
<td>59.82</td>
</tr>
<tr>
<td>2017</td>
<td>58.50</td>
</tr>
</tbody>
</table>

Reference 1-11
Pre Interview Programs
• Applications Received

Average Number of Applications Received by Programs

Year

Applications

Reference 11

Number of Applications Received by Residency Programs (average)
Pre Interview

Programs
• Applications Review

• Receiving more applications
• Spending more time on application review

Reference 11
• ERAS
• Tiered system

<table>
<thead>
<tr>
<th>Applications</th>
<th>Application Fees (US Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 10</td>
<td>$99</td>
</tr>
<tr>
<td>11-20</td>
<td>$13 Each</td>
</tr>
<tr>
<td>21-30</td>
<td>$19 Each</td>
</tr>
<tr>
<td>31 or more</td>
<td>$26 Each</td>
</tr>
</tbody>
</table>
Pre Interview
• ERAS Submissions

Cost of Applications

US Dollars

Year

Reference 11
Trends

- **Applicants**
  - Submitting more applications
  - Gross
  - % of total
  - Higher cost

- **Programs**
  - Receiving more applications
  - Spending more time on application review
Trends

Interview
<table>
<thead>
<tr>
<th>Charting Outcomes of the Match</th>
<th>2014</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 Scores</td>
<td>237</td>
<td>239</td>
</tr>
<tr>
<td>Step 2 Scores</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Number of Research Experiences</td>
<td>3.7</td>
<td>4.2</td>
</tr>
<tr>
<td>Number of Volunteer Experiences</td>
<td>5.9</td>
<td>5.5</td>
</tr>
</tbody>
</table>
Trends

- **Applicants**
  - Submitting more applications
    - Gross
    - % of total
  - Higher cost

- **Programs**
  - Receiving more applications
  - Spending more time on application review
Trends

Pre Interview
- **Applicants**
  - Submitting more applications
    - Gross
    - % of total
  - Higher cost
- **Programs**
  - Receiving more applications
  - Spending more time on application review

Interview
- **Applicants**
  - Stable board scores & experiences
- **Programs**
  - Stable nationwide interviews

Post Interview
Trends
Applications Received by Residency Programs (average)

- Number of Applications Received:
  - 2008: 17
  - 2009: 29.4
  - 2010: 32.7
  - 2011: 42
  - 2012: 42.9
  - 2013: 34.9
  - 2014: 31.2
  - 2015: 43.5
  - 2016: 62.2
  - 2017: 63.8
• Applications Rose
• # needed to rank 2.3-5.1

Programs
• Applications and Ranks

Applications Received and Applicants Ranked

- Number of Ranked Applicants Needed to Fill All Positions in a Program (average)
- Number of Applications Received by Residency Programs (average)
### Applicant
- Rank List

<table>
<thead>
<tr>
<th>Charting Outcomes of the Match</th>
<th>2014</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>The average rank list depth for matched applicants</td>
<td>12.3</td>
<td>12.8</td>
</tr>
</tbody>
</table>
Pre Interview

• Applicants
  • Submitting more applications
  • Gross
  • % of total
  • Higher cost

• Programs
  • Receiving more applications
  • Spending more time on application review

Interview

• Applicants
  • Stable board scores & experiences

• Programs
  • Stable nationwide interviews

Post Interview

• Applicants
  • Stable rank list length

• Programs
  • Stable number of applicants needed to fill all spots in a program
Limitations

- Retrospective
- Based on nationwide trends
- No applicant specific or program specific data
- Limited data on applicant rank list
Conclusion

• The “magic number” of applications needed to submit or interviews to attend to match is unknown

• The trend is towards increased application submission → Pre Interview
  - Programs are spending more time on application review
  - Applicants are spending more money on application submission

• Stable number needed to rank on the part of programs
• Stable board scores and experiences
References

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• 5 National Resident Matching Program, Results and Data: 2012 Main Residency Match. National Resident Matching Program, Washington, DC. 2012
• 6 National Resident Matching Program, Results and Data: 2013 Main Residency Match. National Resident Matching Program, Washington, DC. 2013
• 10 National Resident Matching Program, Results and Data: 2017 Main Residency Match. National Resident Matching Program, Washington, DC. 2017
• 11 “Historical Specialty Specific Data” (4/12/17) © 2017 AAMC https://www.aamc.org/services/eras/stats/359278/stats.html